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(54) MAKEUP PREPARATIONS

(71) I, BJARNE ASKVOLD, a Danish citizen, of 125, Korsdalsvej, Rødovre, Denmark, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to makeup compositions for cosmetic and other use, and to the preparation of such compositions.

In cosmetics, makeups are generally used as a foundation for keeping powder on the face for longer periods of time and they generally contain inorganic pigments to give a suitable colour and to cover possible blemishes and other skin marks.

The main demands of a good makeup composition are that it should be innocuous to the skin and easy to apply, that it should have good covering capacity in thin layers, that it should be of good resistance to water, for instance rain, but allow for penetration of perspiration and other excretions from the pores of the skin, that it should be fairly easy to remove and that it should be of good keeping quality on storing.

None of the known makeup compositions fulfil these demands but represent some sort of compromise.

The oldest makeup compositions are the so-called grease paints, which are still considered effective for theatrical purposes. The grease paints consist substantially of pigments which are suspended in oils to which are added waxes, lanolin, or petroleum jelly to give a desired consistency. They are shiny and easily smear. Prolonged use of grease paint is bad for the skin since the layer is totally impervious to air and moisture and closes the pores of the skin.

A dry makeup, the so-called cake makeup, is also known which consists substantially of pigmented powders with bees wax or carnauba wax as a weak bonding agent, and generally includes a hydrophilc substance, which allows for applying the makeup by means of a moistened felt brick.

Obviously, this kind of makeup does not adhere strongly to skin, and it is not water resistant, so that it cannot, for instance, stand rain.

A third kind of makeup is an emulsion type composition. This kind of makeup is made from pigments suspended in an oil base, which will usually consist of mixtures of waxes with plasticizers, which may be oils, lanolin and petroleum jelly. A suitable emulsifying agent is admixed and an emulsion is made with water. On applying this makeup the water will evaporate to leave a layer of the pigmented wax base on the skin. However, any subsequent contact with water may well result in the makeup emulsifying again, thus spoiling the attained effect.

In making the present invention the main object was to provide a makeup composition which is easily applied and, once applied, is water resistant, which is easy to remove, and which allows for perspiration through the applied layer and does not close the pores of the skin.

With this object in view the makeup compositions of the invention comprise a film-forming base comprising a hydrocarbon polymer having a molecular weight in the range of 400 to 6000, 0.1 to 5% by weight of a water-insoluble metal salt of a fatty acid having at least 12 carbon atoms and a substantially odourless solvent, boiling in the range 100—250°C, for the film-forming base in an amount of 100 to 500% by weight based on the hydrocarbon polymer.

Mixtures of the hydrocarbon polymers may be present in the makeup compositions of the invention.

Particularly preferred hydrocarbon polymers are the microcrystalline waxes and particularly those having a molecular weight from 500 to 600, a penetration according to ASTM-D5-49 from 3 to 30, and a melting point from 65°C to 90°C, and crystalline olefin polymers, e.g. linear polyethylenes of a molecular weight from 1000 to 4000, as well as mixtures thereof.

Depending on the melting point and penetration of the microcrystalline wax or

crystalline olefin polymer, up to 50% by weight of paraffin wax may be admixed to the hydrocarbon polymer to lower the melting point of the filmforming base of the present makeup compositions. Usually not more than 5% by weight of paraffin wax will be admixed with the hydrocarbon polymer.

Among the metal salts forming a component of the filmforming base, the prefered ones are the aluminium salts, e.g. aluminium mono-, di-, and tristearates, and at present the best results have been obtained using aluminium tristearate in amounts from 4% to 20% by weight, preferably 5 to 10%, as calculated upon the weight of hydrocarbon polymer. Other salts, which may be used, are e.g. lithium, calcium and magnesium salts or mixtures thereof.

The preferred solvent is at present a commercially available odourless grade of mineral spirits, i.e. white spirits having a boiling range of 180—210°C. Other solvents for the filmforming polymer, however, may also be used provided that they be of similar dissolving power and volatility, and are innocuous and substantially odourless.

For the colouring of the compositions, inorganic pigments are preferably used as, for example, titanium dioxide, barium sulphate, chromium trioxide, iron oxides, such as burnt sienna, cadmium reds, ochres, ultra-marine blue, umber, and various combinations thereof. Insoluble and innocuous organic pigments may, however, also be used, possibly together with, for example, titanium dioxide.

For a better distribution on the skin of special types of pigmenting material, particularly flaky pigments, such as mica and metals in flake form, an admixture of fatty alcohols, particularly C_{10-14} fatty alcohols, may be desirable, when the pigments, such as titanium dioxide coated mica and bismuth compounds, are used to produce a mother of pearl effect.

Admixture of faty alcohols also gives an unexpectedly god spreadability of the more difficultly spreadable compositions of the invention.

Further admixtures are antioxidants and perfumes. The preferred antioxidants are butylated hydroxytoluene and butylated hydroxyanisole.

In the preferred method of preparing the makeup compositions of the invention, the fatty acid metal salt is melted together and mixed intimately with part of the hydrocarbon polymer and antioxidant, and the resulting mixture is melted together with the remainder of hydrocarbon polymer with a possible admixture of paraffin wax, after which the solvent is stirred into the melted mixture together with further antioxidant. The resulting product is the filmforming base, which may be used as a rinsing composition for removing the pigmented compositions of the invention.

The latter are prepared by stirring pigmenting material into the warm filmforming base in continuation of the solvent admixture, and coling the homogeneous pigmented mixture to room temperature.

The compositions of the invention are advantageous in that they are relatively cheap in manufacture, and innocuous, they may be made to dry up shiny or dull, as desired, they are totally water resistant, they are easily removed by means of a rinsing cream, they do not penetrate into the pores of the skin, they are easily spread owing to thixotropic properties, they do not smear, they do not influence the natural humidity of the skin, leaving a microscopically thin film which allows for perspiration but protects against too strong evaporation of the natural moisture of the skin, and they make the skin supple and smooth, protecting it against exposure to wind and rain.

The compositions of the invention have been tried out by ballet dancers and proved to be preferred to any other kind of makeup.

The compositions of the invention may also have admixed substances, absorbing ultraviolet light to protect against sun burn.

By suitable pigmenting, the compositions of the invention are excellently suited for camouflage purposes for soldiers. For this purpose, the compositions are generally made in stick form, instead of in cream form, by reducing the solvent content, and possibly admixing some higher melting wax.

In one preferred class of the compositions they are 100 parts by weight of a microcrystalline wax having a melting point of 80 to 85°C and a penetration of 10 to 20 according to ASTM-D5-49, 3 to 4 parts by weight of aluminium tristearate, 15 to 35 parts by weight of paraffin wax with a melting point of 50 to 52°C and 30 to 40 parts by weight of white spirits. In a particularly preferred composition there are 100 parts by weight of microcrystalline wax of melting point 80 to 85°C, 6 parts by weight of aluminium tristearate, 50 parts by weight of paraffin wax of melting point 50 to 52°C and 140 parts by weight of odourless white spirits. Other preferred compositions comprise 100 parts by weight of microcrystalline wax, 25 parts by weight of paraffin wax, 4.5 parts by weight of aluminium tristearate, 0.25 parts by weight of antioxidant, 175 parts by weight of odourless white spirits and 100 to 120 parts by weight of inorganic pigmenting material.

In a further preferred class of compositions there are 40 parts by weight of polyethylene of an average molecular weight from 3500 to 4000, 9 parts by weight of

microcrystalline wax, 1 part by weight of aluminium tristearate, 130 parts by weight of odourless white spirits, 0.36 parts by weight of antioxidant and 80 to 85 parts by weight of inorganic pigmenting material. Yet another preferred class of the compositions comprises 300 parts by weight of microcrystalline wax, 50 parts by weight of paraffin wax, 10 parts by weight of aluminium tristearate, 10 parts by weight of a C_{10}-C_{14} fatty alcohol, 700 parts by weight of odourless white spirits, 2 parts by weight of antioxidant and 460 parts by weight of flaked mica.

A preferred method for making compositions in accordance with the invention comprises melting together and mixing intimately the metal salt and ten times as much of the hydrocarbon polymer, 0.2% by weight of an antioxidant being dissolved in the melted mixture, melting a further quantity of the hydrocarbon polymer, and optionally also paraffin wax, with the molten mixture, adding, with stirring, odourless white spirits and further antioxidant to the molten mixture, the antioxidant being added in an amount sufficient to make a total of 0.2% by weight of the mixture, mixing in inorganic pigment material, stirring so as to distribute the pigmented material homogeneously throughout the mixture and cooling the mixture to room temperature.

The following examples are illustrative of the compositions of the invention and their manufacture.

EXAMPLE 1

A sun-tan makeup was prepared from the following major ingredients:

	Parts by weight
Microcrystalline wax, m.p. 82°C	22
Mineral spirits, odourless, b.r. 140—210°C	78
Aluminium tristearate	2.2
Burnt sienna	32
Butylated hydroxytoluene (BHT)	0.2

The aluminium tristearte was mixed with the burnt sienna, and the mineral spirits, in which the BHT is dissolved, poured over the mixture, which was placed in a turbomixer. After heating to 45°C, the turbomixer was started and the mixing continued until the mixture was homogeneous. The mixture was heated to 95°C, whereby the aluminium tristearate gelatinized.

Now, the microcrystalline wax was added under continued stirring and heating, until the mixture was again homogeneous.

Still stirring, the mixture was cooled to 40°C, and perfume was admixed, after which the mixture was rapidly cooled to 22°C. The mixture was left overnight, when it was homogenized at low pressure, after which it was ready for use.

EXAMPLE 2

A filmforming base, which may also serve as a makeup remover, was prepared as follows:

10.8 kilograms of a microcrystalline wax, melting at 82—84°C and having a penetration between 10 and 20 at 25°C, were melted at 80°C, and 1.2 kilograms of aluminium tristearate and 24 grams of BHT were dissolved in the melt with stirring until a clear solution was obtained. The resulting product is referred to as composition A in the following.

12 kilograms of composition A were melted together with 9.2 kilograms of microcrystalline wax, 10 kilograms of paraffin wax, melting at 50—52°C, and 44 grams of BHT. The melt was vigorously stirred while admixing 72.8 kilograms of odourless white spirits with boiling range 180—210°C, and the resulting mixture subjected to rapid cooling to room temperature.

EXAMPLE 3

Following the procedure of Example 2, a filmforming base was prepared from 18 kilograms of composition A, 24 kilograms of microcrystalline wax, 10 kilograms of paraffin wax, 72.8 kilograms of white spirts, and 100 grams of BHT.

By admixing 28 kilograms of chromium oxide green and 16 kilograms of ochre, a makeup composition was obtained, which was semisolid and adapted for being shaped into sticks to be used for camouflage purposes by soldiers.

EXAMPLE 4

A makeup composition specially adapted for scenic artists, was prepared from the following ingredients.

	Parts by weight
Composition A	100
Microcrystalline wax	110
Paraffin wax	50
BHT	0.32
Odourless white spirits	728
Pigment mixture	320
Perfume	as desired

The pigment had the following composition:

	Parts by weight
Titanium dioxide	75
Light brown ochre	22.5
Dark brown ochre	1.25
Red ochre	1.25

EXAMPLE 5

Eye shadows were prepared, following the procedure of Example 3, from the following ingredients:

	Parts by weight
Composition A	100
Microcrystalline wax	210
Paraffin wax	50
Odourless white spirits	728
BHT	0.5
C_{12}-fatty alcohol	10
Amber Mica	459
Perfume	as desired

EXAMPLE 6

A semiliquid eye liner was prepared from the following ingredients:

	Parts by weight
Composition A	9
Microcrystalline wax	320
Paraffin wax	3.3
Odourless mineral spirits	1456
Butylated hydroxyanisole (BHA)	3.6
Brown iron oxide	350
Perfume	as desired

EXAMPLE 7

A rouge paste was prepared from the following components:

	Parts by weight
Composition A	20
Polyethylene (molecular weight 3700)	80
Odourless white spirits	260
BHT	0.7
Pigments	90
Perfume	as desired

The pigments were as follows:

	Parts by weight
Titanium dioxide	20
Barium sulphate	42
Aluminium hydroxide	18
Red iron oxide	15
Dark brown iron oxide	5

EXAMPLE 8

By exchanging the pigments of Example 7 with the following:

	Parts by weight
Titanium dioxide	22.5
Barium sulphate	47.5
Aluminium hydroxide	20
Light brown iron oxide	9.5
Dark brown iron oxide	0.5

a light-skin coloured makeup was obtained.

The pigments used in the Examples were usual cosmetic grade pigments.

Other makeup compositions, such as lip makeup, and makeups containing astringents and aseptics, can be prepared similarly.

Transparent makeups can also be prepared, using soluble cosmetic grade colouring material.

WHAT I CLAIM IS:—

1. A makeup composition comprising a filmforming base comprising a hydrocarbon polymer having a molecular weight in the range 400 to 6000, 0.1—5% by weight of a metal salt of a fatty acid having at least 12 carbon atoms, and a substantially odourless solvent, boiling in the range 100—250°C, for the film-forming base in an amount of 100—500% by weight based on the hydrocarbon polymer.

2. A makeup composition according to claim 1 which also contains up to 50% by weight of a paraffin wax.

3. A makeup composition according to claim 1 or claim 2 which also contains a perfume.

4. A makeup composition according to any of claims 1 to 3 which also contains an inorganic pigment.

5. A makeup composition according to any of claims 1 to 4 which also contains an antioxidant.

6. A makeup composition according to any of claims 1 to 5 in which the hydrocarbon polymer is a linear polyethylene having a molecular weight in the range 1000 to 4000.

7. A makeup composition according to any of claims 1 to 5 in which the hydrocarbon polymer is a microcrystalline wax.

8. A makeup composition according to claim 7, in which the microcrystalline wax has a molecular weight of 500—600, a penetration according to ASTM-D5-49 from 3 to 30, and a melting point from 65° to 90°C.

9. A makeup composition according to any of claims 1—8, in which the solvent is odourless white spirits with a boiling range of 180—210°C.

10. A makeup composition according to

any of claims 2—7, in which the film-forming base consists of 100 parts by weight of a microcrystalline wax having a melting point of 80—85°C and a penetration of 10 to 20 according to ASTM-D5-49; 3—4 parts by weight of aluminium tristearate; 15—35 parts by weight of paraffin wax with a melting point of 50—52°C; and 30—40 parts by weight of white spirits.

11. A makeup composition according to any of claims 2—9, in which the film-forming base consists of 100 parts by weight of microcrystalline wax of melting point 80—85°C, 6 parts by weight of aluminium tristearate, 50 parts by weight of paraffin wax of melting point 50—52°C, and 140 parts by weight of odourless white spirits.

12. A makeup composition according to any one of the claims 2—9, consisting of 100 parts by weight of microcrystalline wax, 25 parts by weight of paraffin wax, 4.5 parts by weight of aluminium tristearate, 0.25 parts by weight of antioxidant, 175 parts by weight of odourless white spirits, and 100—120 parts by weight of inorganic pigmenting material.

13. A makeup composition according to any of claims 1—6, consisting of 40 parts by weight of polyethylene of an average molecular weight from 3500 to 4000, 9 parts by weight of microcrystalline wax, 1 part by weight of aluminium tristearate, 130 parts by weight of odourless white spirits, 0.36 parts by weight of antioxidant, and 80—85 parts by weight of inorganic pigmenting material.

14. A makeup composition according to any of claims 1—9, consisting of 300 parts by weight of microcrystalline wax, 50 parts by weight of paraffin wax, 10 parts by weight of aluminium tristearate, 10 parts by weight of a C_{10}-C_{14} fatty alcohol, 700 parts by weight of odourless white spirits, 2 parts by weight of antioxidant, and 460 parts by weight of flaked mica.

15. A method of producing a makeup composition according to any of claims 1—14, in which the metal salt and ten times as much of the hydrocarbon polymer are melted together and mixed intimately, 0.2 percent by weight of an antioxidant being dissolved in the melted mixture, a further amount of the hydrocarbon polymer, and optionally paraffin wax, is then melted with the melted mixture, odourless white spirits is then added with stirring to the molten mixture together with further antioxidant, the latter in an amount to make a total of 0.2 percent by weight of the mixture, and finally inorganic pigment material is mixed into the mixture with stirring to attain homogeneous distribution of the pigmenting material and the homogeneous distribution of the pigmenting mixture cooled to room temperature.

16. A makeup composition according to claim 1 substantially as herein defined with reference to the examples.

17. A makeup composition when prepared by a process as claimed in claim 15.

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